

UNCLASSIFIED

HEADQUARTERS
9778 TSU RADIOLOGICAL SAFETY SUPPORT UNIT
Fort McClellan, Alabama

11 July 1953

SUBJECT: After-Action Report Operation Upshot-Knothole

TO: Commanding Officer
Chemical Corps Training Command
Fort McClellan, Alabama
ATTN: S-3

1. This Unit reported to the Nevada Proving Ground 2 March 1953 with a strength of one hundred forty-four (144) Enlisted Men, one (1) Warrant Officer and twenty-seven (27) Officers. The Unit phased out gradually after shot #10 as the support requirement diminished. Last element of unit departed 15 June 1953 for home stations.

2. The following mission was assigned by the Rad-Safe Officer, NPG:

- a. Initial and daily surveys of test areas as required.
- b. A complete monitoring program.
- c. Issue and processing of all personnel dosage devices.
- d. Radiological Safety records administration.
- e. Control and operation of personnel and equipment decontamination stations.
- f. Record and control all radioactive material entering or leaving the Proving Grounds.

3. This unit was present for eleven (11) nuclear detonations. Thirty-eight (38) personnel exceeded the maximum permissible dosage of 3.9r. Each case was investigated and negligence was found in two (2) cases, one EM absorbing 16r and another EM 17r. These two men were relieved and returned to parent organization.

4. Discipline - seven (7) minor infractions of discipline were disposed of under Article 15, Uniform Code of Military Justice. One (1) Summary Court resulted in acquittal. Two (2) cases of AWOL resulted in relief and subsequent trial and reduction in rank.

5. Welfare & Morale - Two outings were held for the entire unit in which there was maximum participation. A good amateur soft-ball team developed much team-work and esprit de corps and added to general morale, utilizing off-time.

UNCLASSIFIED

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~

UNCLASSIFIED

SUBJECT: After-Action Report Operation Upshot-Knothole

11 July 1953

6. Personnel were utilized by monitoring and processing scientific parties, normally till D plus 3 of preceding shot, then preparing the target area for the following shot. There were six (6) general target areas. (See attached sketch)

7. The following sections operated on a twenty-four (24) hour basis:

- a. On-Site Operations Office
- b. Plotting and Briefing
- c. Records and Dosimetry
- d. Vehicle Decontamination Station
- e. Supply
- f. Motor Pool
- g. Laundry

This was accomplished by organizing shifts within the sections. On Shot Day, every man in the unit was present at the Rad-Safe building and observed the detonation.

8. Control of the unit was exercised by Commanding Officer in the position of On-Site Operations Officer directing all section leaders. On Shot Day, the Commanding Officer placed himself at the dial phone in the Plotting and Briefing section, where he was in a position to receive all missions and instructions from the Rad-Safe Officer in the Control Office of CP #1 and have same transmitted over High Frequency radio to monitoring teams and checkpoints in the field.

9. The majority of scientific projects were most cooperative in adhering to the processing procedures developed by this unit.

10. During roll-up, all contaminated areas were properly marked and final surveys conducted, with semi-permanent barricades being erected. A detachment of two (2) officers and twenty (20) EM remained at the Nevada Proving Ground to conduct interim operations.

11. Difficulties encountered:

- a. "Q" clearances were delayed and some "Q"'s necessary had not been processed and forwarded yet at the end of operations.
- b. Qualified administrative personnel, both officers and enlisted men, were not available in the unit for On-Site Operations section, Plotting and Briefing section and Monitoring section.
- c. There was a lack of adequately trained motor vehicle operators. Some individuals received only basic motor vehicle operators training and on arrival at the site were placed under control of Off-Site Operations

UNCLASSIFIED

2

~~RESTRICTED~~
SEC

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~
~~SECURITY INFORMATION~~

UNCLASSIFIED

SUBJECT: After-Action Report Operation Upshot-Knothole 11 July 1953

where it was not possible to continue their training or supervise such training. This resulted in three (3) motor vehicle accidents in the Off-Site section as compared to one (1) motor vehicle accident in the On-Site section, which had 50% more vehicles operating.

d. Strength accountability: This being a unit composed of personnel on Detached Service, strength accountability was at times difficult, because when officers and enlisted men did not report for duty on specified dates as ordered, they could not be accounted for on the Morning Report until physically present. This caused an unnecessary problem of coordination with each parent organization, which would not have been necessary had officers and enlisted men been assigned to this unit.

e. Motor vehicle accidents: Total mileage of 43 Rad-Safe vehicles 330,226 miles.

Section	Type vehicle & agency	Estimated Damage
Records & Dosimetry	Chevrolet Carryall-AEC	\$647.00
Off-Site	3/4 ton w/c-Army	400.00
Off-Site	'51 Plymouth Sedan-AEC	Total loss (App \$500.00)
Off-Site	1/2 ton Dodge Pick-up-AEC	50.00

f. Much difficulty was experienced with radio communications on first five (5) shots. The unit did not have any qualified communications personnel. This necessitated requesting one (1) officer on TDY from CCTC to survey the entire communications net at the Nevada Proving Ground.

12. Conclusions and Recommendations

a. Informal interviews with officers from Headquarters, Armed Forces Special Weapons Project, Washington, D.C. indicated that the Rad-Safe Support Unit in the future would be responsible for terrain monitoring of all Off-Site positions in addition to the On-Site mission. Requests were made of this office to submit recommendations for manning table for permanent unit to include the Off-Site mission. (See inclosure #1 for recommended manning table for permanent unit)

b. Recommend that in future tests, all commercial type motor vehicles be utilized for Off-Site Operations. This is necessary due to great distances involved. That military vehicles be utilized for certain missions in On-Site Operations with military radios installed, responsibility for up keep, spare parts and maintenance remaining with AEC contractor. This would require the following military vehicles: one (1) 1/4 ton, eight 3/4 ton w/c, one (1) 2 1/2 ton 6x6 cargo and five (5) power-driven decontaminating apparatus - a total of fifteen (15) vehicles. (See inclosure #2)

c. That all personnel of the unit be assigned to the unit during planning phase and actual operation of future tests.

UNCLASSIFIED

3

~~RESTRICTED~~
~~SECURITY INFORMATION~~

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~

UNCLASSIFIED

SUBJECT: After-Action Report Operation Upshot-Knothole 11 July 1953

d. Recommend two (2) Rad-Safe Engineers, (MOS 7330) be assigned the unit as assistant On-Site Operations Officers. One to serve in the On-Site Operations office as advisor and one to work in the control room of CP #1 with the Rad-Safe Officer. In the opinion of the undersigned, the Rad-Safety Engineer should not be placed in a command position but rather in an advisory position. The On-Site Operations Officer should be an officer with broad command and troop experience.

e. Recommend a qualified radio communications officer be assigned the unit, his functional location to be in Unit Headquarters.

f. That a roster of personnel for whom "C" clearances are required be submitted to S-2 of the Cml Corps Tng Command six (6) months prior to the start of a pending operation.

g. That personnel adequately trained in general administration be assigned to the On-Site Operations section and the Records and Dosimetry section.

h. Recommend seventy-five percent (75%) of the unit be trained and qualified as motor vehicle operators.

i. Recommend the unit commander be delegated authority to appoint and reduce individuals up to and including grade E4, Corporal, when unit is away from home station.

j. Unit Commander did not have sufficient officer personnel to draw on to insure competent, efficient officers in key positions, such as section leaders. It is mandatory that each section be headed by an officer with initiative and drive. The operation is a fast-moving situation and an officer who "just wants to get by" is inadequate to fill a key position in this organization.

k. Officer's records, Form 66 and field 201 files should accompany unit on future operations. There were several cases of delayed efficiency reports due to distance involved and the records being stored at Headquarters, CCTC. Even though rosters of rating and indorsing officers were submitted to CCTC, a few ratings, which were due in April, were not accomplished until return of unit, latter part of June.

l. See inclosure #4 for recommended Functional Chart for Rad-Safe Unit.

W. R. Milburn

W. R. MILBURN
Lt Col, Cml C

4 Incl:

1. Manning Table
2. Vehicle & Radio Requirements Commanding
3. Sketch of Yucca Flat Target Area
4. Functional Chart

~~RESTRICTED~~

UNCLASSIFIED

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~
~~SECURITY INFORMATION~~
RECOMMENDED MANNING TABLE FOR
THE RADIOLOGICAL SAFETY UNIT

UNCLASSIFIED

HEADQUARTERS RSSU

1 Lt Col.	* Commanding Officer and Operations Officer (additional duty)
1 Capt	* Administrative Executive
1 WO	Personnel Officer
1 M/Sgt	1st Sgt
1 Sgt	Personnel Clerk
1 Cpl	Unit Clerk
1 Cpl	Mail Orderly

ON-SITE OPERATIONS

1 Lt Col.	* Operations Officer
1 Major	* Ass't Operations Officer
1 Lt	* Administrative Officer
8 Lt	* Program Monitors (Special monitoring as additional duty)
1 M/Sgt	* Chief Clerk
1 Sgt	Clerk Typist
1 Cpl	* Messenger

Plotting and Briefing Section

1 Capt	* Section Chief
2 Lt	* Briefing Officers
1 WO	* Communication Officer
1 Sfc	* Chief, Enlisted Section
2 Cpl	Radio Operators
1 Pfc	Radio Operator and Draftsman

Dosimetry and Records Section

1 Capt	* Section Chief
4 Lt	* Shift Officers
4 Sgt	Shift NCO
4 Cpl	Clerk Typist
12 Pfc	General Dosimetry and Records

Monitor Section

1 Capt	* Section Chief
1 Lt	* Ass't Section Chief
1 Lt	Vehicle Control and Mapping Officer
1 Lt	Administrative Officer
1 Lt	Signs and Stakes Officer
1 Sgt	Ass't Signs and Stakes NCO
10 Sgt	* Senior Project Monitors
1 Sgt	Vehicle Control Ass't
10 Cpl	Project Monitors
1 Cpl	Clerk Typist
20 Pfc	Project and Stand-by Monitors
13 Pvt	Signs, Vehicle Monitors, and related duties (rotational)

Incl. #1.

~~RESTRICTED~~
~~SECURITY INFORMATION~~
UNCLASSIFIED

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

Decontamination Section

1 Lt	* Section Chief
1 Lt	* Ass't Section Chief
2 Sgt	* NCO's in Charge
2 Cpl	Team Leaders
3 Pfc	Decontamination Men (Spraymen)
3 Pvt	* Decontamination Men (Spraymen)

LOGISTICS SECTION

1 Capt	* Section Chief
1 Sfc (1502)	Chief Clerk
1 Cpl (4405)	Clerk Typist

Unit Supply Section

1 WO	Property Officer
3 Sfc	* Section NCO's
2 Cpl	Supply NCO's
1 Cpl	Clerk Typist
2 Pfc	Issue Clerks
1 Pvt	Issue Clerk

Laundry

1 Cpl	Laundry Supervisor
2 Pfc	Laundrymen

Radio Instrument Section

1 Sfc	* Instrument Repair Supervisor
2 Cpl	Instrument Repairmen, Senior
2 Pfc	Instrument Repairmen, Junior
1 Pfc	Instrument Issue Clerk
1 Pvt	Instrument Issue Clerk

Motor Maintenance and Transportation Section

1 WO	Motor Officer
1 Sfc	* Motor Sgt
2 Cpl	Mechanic
1 Pfc	Dispatcher

OFF-SITE OPERATIONS

1 Major	* Operations Officer
1 Capt	* Ass't Operations Officer
1 Lt	Supply Officer
4 Lt	* Chief Station Monitors
7 Sfc	Station Monitors
7 W/Sgt (AF)	Station Monitors
7 W/Sgt (Army)	* Station Monitors
1 Cpl	* Clerk Typist
3 Cpl	* Radio Operators

* Request that these personnel be assigned "Q" clearances.

UNCLASSIFIED

~~RESTRICTED~~
~~SECURITY INFORMATION~~

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

FD

VEHICLE TRANSPORTATION
AND
RADIO COMMUNICATION

* Vehicles should have outside mount to hold
Tlb's while on survey

** Should be equipped with modified aerial.

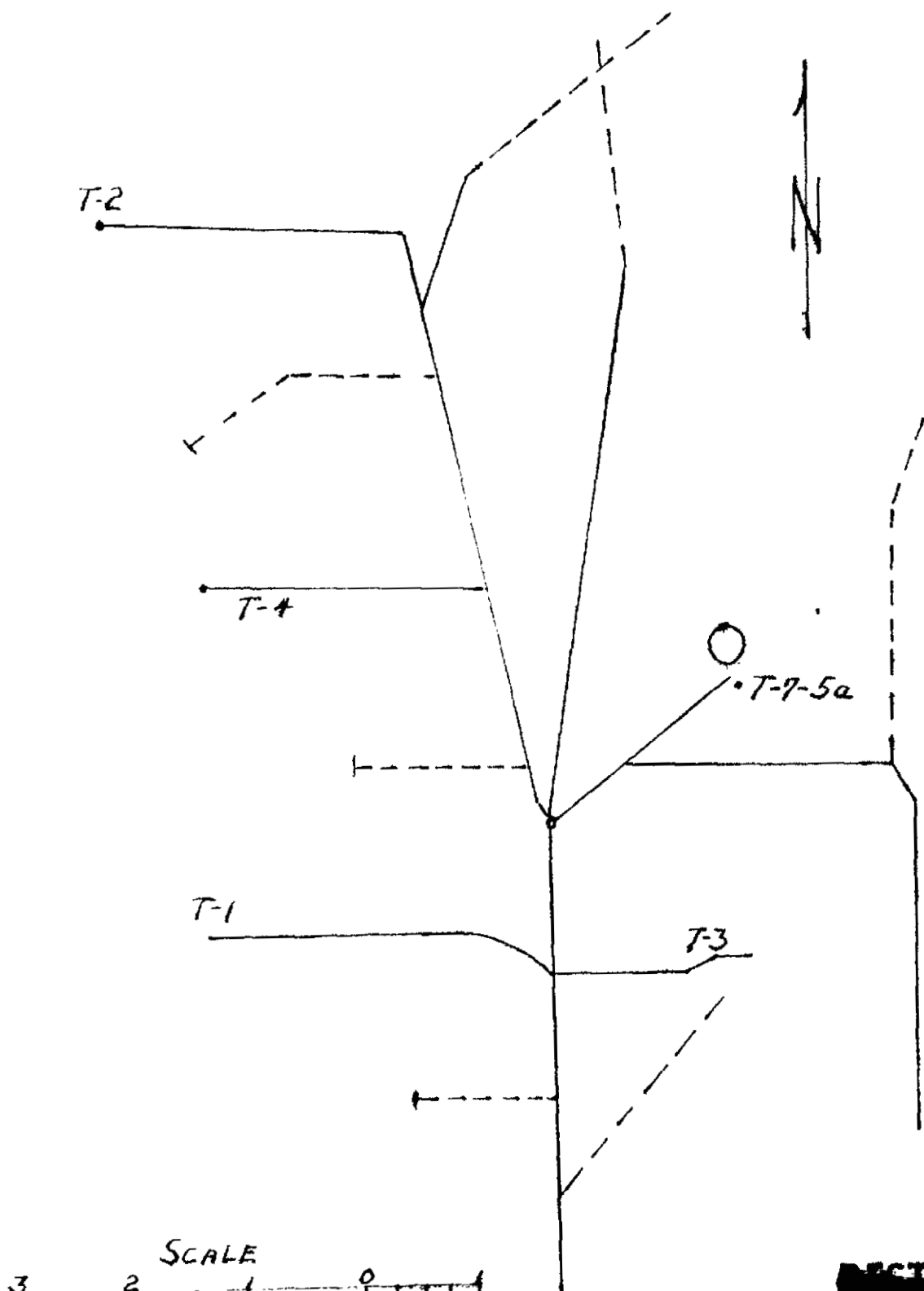
UNCLASSIFIED ~~RESTRICTED~~
~~SECURITY INFORMATION~~

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~

~~RESTRICTED INFORMATION~~

UNCLASSIFIED



SCALE
3 2 1 0
STATUTE MILES

YUCCA FLAT MAIN TARGET AREA

UNCLASSIFIED

~~RESTRICTED~~

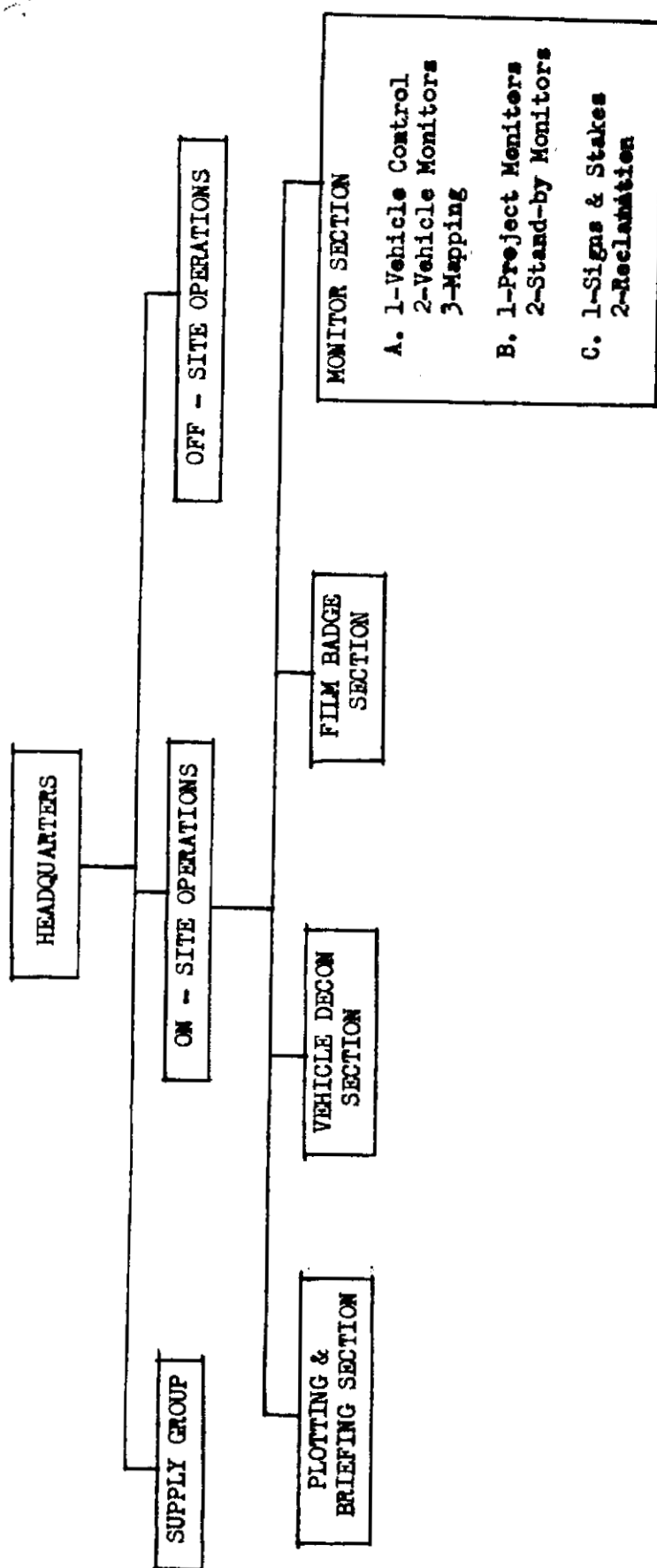
~~RESTRICTED INFORMATION~~

Incl- # 3

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

UNCLASSIFIED

~~RESTRICTED~~
SECURITY INFORMATION



UNCLASSIFIED

~~RESTRICTED~~
SECURITY INFORMATION

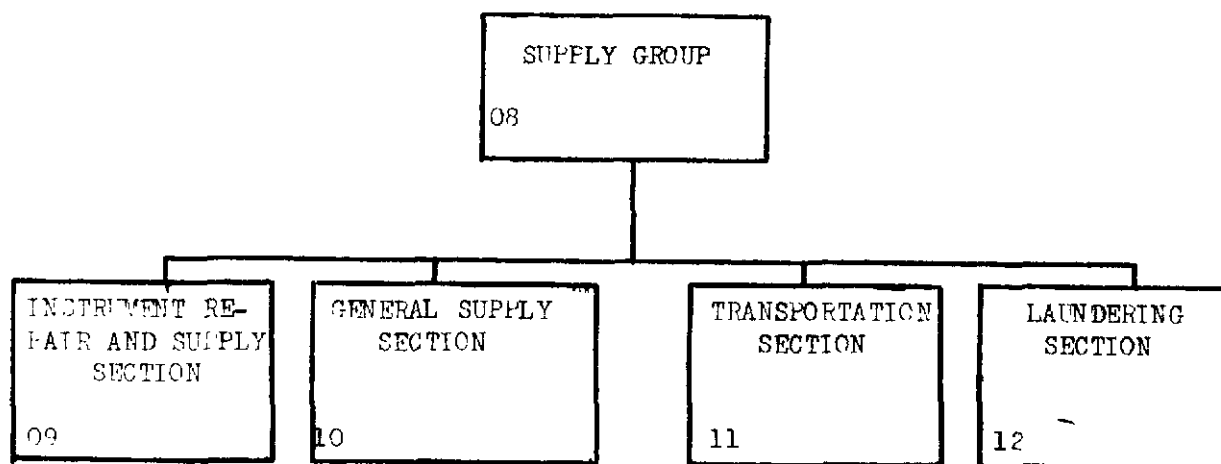
Incl. # 4

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~
SECURITY INFORMATION

UNCLASSIFIED

Recommend that the Functional Chart of the 1st Radiological Safety Support Unit be amended to include a Laundering Section.



UNCLASSIFIED

~~RESTRICTED~~
SECURITY INFORMATION

Incl-# 4

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~ UNCLASSIFIED
~~SECURITY INFORMATION~~

6380

CMLWO-P (3 Aug 53)

SUBJECT: After Action Report Operation UPSHOT KNOTHOLE

TO: Chief, Intel Br
Chief, Tng Br
IN TURN

FROM: Chief, P&O Br

DATE: 7 Aug 53 COMMENT NO. 2
Lt Col Lane/56793/dik

1. It is not considered necessary that this division comment to the Commanding Officer, Chemical Corps Training Command on the inclosed report.

2. In regards to the reference in the report and in Comment No. 1 to the laundry section, a specific part of the radiological safety activity of this unit is a provision of protective clothing to all personnel connected with the tests. This provision of clothing includes the laundering, storing, and issuing thereof.



JACK F. LANE, Lt Colonel, CmlC
Chief, Plans and Operations Branch

1 Incl
n/c

CML C-1.4

TO: Chief, Tng Br

FROM: Chief, Intel Br

DATE: 17 Aug 53
Maj Walsh/jee/75439

COMMENT NO. 3

This office concurs with the proposed method of obtaining "Q" clearances as indicated in paragraph 3 of Comment No. 1.



FRANK L. SCHAF, JR., Lt Colonel, CmlC
Chief, Intelligence Branch

1 Incl
n/c

~~RESTRICTED~~
~~SECURITY INFORMATION~~

3 UNCLASSIFIED

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63 ; Drawer # 4

UNCLASSIFIED

~~CONFIDENTIAL~~
~~CONFIDENTIAL~~

10-1.4

TO: Chief, Tag Br

FROM: Chief, Intel Br

DATE: 17 Aug 53
Maj Walsh/jee/71439

COMMENT NO. 3

This office concurs with the proposed method of obtaining "C" clearances as indicated in paragraph 3 of Comment No. 1.

FRANK L. SCHAE, JR., Lt Colonel, GMLC
Chief, Intelligence Branch

UNCLASSIFIED

~~RECEIVED~~
~~CONFIDENTIAL~~
~~CONFIDENTIAL~~

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

~~RESTRICTED~~
~~SECURITY INFORMATION~~
UNCLASSIFIED

CLMO-T

SUBJECT: After Action Report Operation UPSHOT KNOTHOLE

3 August 1953

12j. It cannot be too greatly emphasized that the personnel picked for this unit must be of the highest calibre in professional training, competence, initiative and character. This is true from the Commanding Officer to the last Private. On an operation each individual is an important wheel in the mechanism for which there are not spares. Time and distance preclude correction of an error in judgment of selection of individuals. An atomic operation is fast moving with rapidly changing situations. The success or failure of important and expensive experiments depends upon the activities of the Rad-Safe Unit. Every individual must carry his own load.

Inclosure 1. No comment is made in view of advanced state of unit T/D.

1 Incl
Subj rept,
dat 11 Jul 53,
w/1 Incl

M. L. Denlinger
M. L. DENLINGER, Lt Colonel, CMIC
Chief, Training Branch

UNCLASSIFIED

~~RESTRICTED~~
~~SECURITY INFORMATION~~

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63; Drawer # 4

UNCLASSIFIED

#13200

DISPOSITION FORM

SECURITY CLASSIFICATION (If any)

~~RESTRICTED~~
~~RESTRICTED~~
~~SECURITY INFORMATION~~

FILE NO.

SUBJECT

CHLWO-T

After Action Report Operation UPSHOT KNOTHOLE

TO

FROM

DATE

COMMENT NO. 1

Chief, P&O Br
Chief, Intel Br
IN TURN

Chief, Tng Br

3 August 1953
Maj Cook/74781/mm

1. Subject report, dated 11 July 1953, with 4 inclosures, is attached for your information and comment.

2. The consolidated and edited comments of the PT&I Division will be sent to the Commanding Officer, Chemical Corps Training Command, for his information and guidance.

3. The following comments and recommendations are numbered to coincide with the referenced paragraphs and inclosures of subject report:

11a and 12f. Six months is not usually enough time to secure "Q" clearances. These require an FBI investigation and should be requested for the people who will require them at the earliest possible time. A year in advance will give ample time but not excessive time.

7g and Inclosure 4. This office does not understand the need for a laundry unit or section. The mission of the unit is to provide radiological safety support. Based on the principle that the unit will be equipped only for housekeeping and training at its home station and the AEC will provide instruments and housekeeping support on an operation through its contractors or other agencies, the unit is not expected to be self sufficient. Laundry facilities should be provided by the contractor or the Quartermaster Corps.

12b. Concur. All vehicles on an operation at either of the proving grounds should be furnished by the Task Force, the Armed Forces Special Weapons Project, or the Contractor. This has been the policy in the past.

12d. Do not concur. There should be no requirement for a 7330 in this unit. An intelligent graduate of the ADO course should be competent to handle these positions. However, this office will concede that, if a qualified ADO graduate is not available, then a 7330 should be used. See paragraph 12j below. It should further be emphasized that in all cases this unit will be operating under the control (command) of the Rad-Safe Director who is a 7330 or equivalent. In addition, it is the DA policy that all newly graduated 7330's will attend the first atomic operation following the completion of their academic work to complete their training. This source should provide more than sufficient 7330's. In view of the above, this office concurs in the T/D which designates the Commanding Officer a 7330 with additional ones as needed drawn from the Navy and Air Force.

UNCLASSIFIED

~~RESTRICTED~~
~~SECURITY INFORMATION~~

DD FORM 96

1 FEB 50

REPLACES NME FORM 96, 1 OCT 48, WHICH MAY BE USED.

16-54801-8

U. S. GOVERNMENT PRINTING OFFICE

Command Historical Office; CBDCOM
Edgewood Arsenal, MD
Row # 2 ; File cabinet #63 ; Drawer # 4